CLAIMS:

1. A device for generating a three-dimensional model of a spatial structure (G) comprising:

a) an imaging unit for generating two-dimensional projection images (A, B, C) of the structure (G) from various directions;

b) a display unit that is coupled to the imaging unit for displaying one of the projection images (A) as a reference image, in which connection the display unit comprises input means in order to make possible the interactive specification of at least one image point of the structure (G) as a reference point (C_A);

c) a data processing device that is coupled to the imaging unit and the display unit and is designed to reconstruct the space point (C_{3D}), belonging to a reference point (C_A), of a structure (G) from further projection images (B, C) produced from other directions using the image-processing unit.

2. A device as claimed in clam 1, characterized in that the imaging unit is a rotation X-ray unit.

3. A device as claimed in claim 1, characterized in that the data-processing device is designed to reconstruct said space point (C_{3D}) by evaluating those image points of the further projection images (B, C) that lie on the respective epipolar line (E_B, E_C) of the associated reference point (C_A).

4. A device as claimed in claim 3, characterized in that the image-point values of said image points are projected on the projection line (L) of the reference point (C_A) and added there punctiformly to form a sum profile (S).

5. A device as claimed in claim 4, characterized in that the sum profile (S) is only evaluated in a segment in which image-point values of all the further projection images (B, C) have contributed to the sum profile (S).

6. A device according to claim 4, characterized in that said space point (C_{3D}) is defined as that position on the projection line (L) of the reference point (C_A) at which the sum profile (S) assumes an extreme.

7. A device as claimed in claim 1, characterized in that the spatial structure (G) has a linear route and the data-processing device is designed to reconstruct said route from the specification of a plurality of reference points (C_A) situated on a reference image (A).

8. A device as claimed in claim 7, characterized in that the data-processing device is designed to determine the width of the structure (G) from the projection of the reconstructed three-dimensional model on projection images of the structure (G).

9. A device as claimed in claim 1, characterized in that it comprises means for determining a characteristic parameter for a cyclic spontaneous movement of the spatial structure (G) and the data-processing device is designed to use only those projection images for the reconstruction of a space point (C_{3D}) that originate from the same phase of the spontaneous movement as the associated reference image (A).

10. A method for generating a three-dimensional model of a spatial structure (G) comprising the following steps:

a) generation of two-dimensional projection images (A, B, C) of the structure (G) taken from different directions;

b) display of one of the projection images as a reference image (A) in order to make possible the interactive specification of at least one image point of the structure as a reference point (C_A);

c) automatic determination of the space point (C_{3D}), belonging to the specified image point (C_A), of the structure from the further projection images (B, C) generated.